INSTRUCTION MANUAL

SONIC 185

ELECTRIC POWERED SPORT GLIDER

WARNING
This model is not toy.
Adult supervision is required.
Read the instructions before any use.
If you have no experience with RC flying models, it is necessary that an experienced pilot assists you.
Never touch the moving propeller.

Modifications, errors and printing errors reserved

PARKFUN
RADIO CONTROLLED ACTION & FUN

PF-210-**-**

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READ THIS FIRST

This model is 100% ready to fly (minor assembly required). This manual is an overview of the construction and operation of this R/C model to be used as a reference.

WARNING NOTES

- A RC model is by no means a harmless plaything. If handled incompetently or carelessly it can cause injury to persons and damage to property.
- When the RC model's motor is running, the rotor is spinning at high speed and contain an enormous quantity of rotational energy. Anything and everything that gets into the rotational plane of the rotor is either damaged or destroyed – and that includes parts of your body. Please take extreme care at all times with this machine.
- If any object obstructs the rotational plane of the revolving rotor, severe damage will probably be caused to the rotor blades as well as the object. Broken parts may fly off and result in enormous imbalance; the whole model then falls into sympathetic vibration, you lose control and have no way of predicting what the model will do next.
- You may also lose control if a problem arises in the radio control system, perhaps as a result of outside interference, component failure or flat or faulty batteries, but in any case the result is the same: the RC model's response is entirely unpredictable. Without prior warning it may move off in any direction.
- Models have many parts which are naturally subject to wear, including gearbox components, motor, ball-links etc., and as a result it is absolutely essential to check and maintain the model regularly. It is standard practice with full-size aircraft to give the machine a thorough "pre-flight check" before every flight, and this is equally important with your RC model. Constant checking gives you the opportunity to detect and correct any faults which may develop before they are serious enough to cause a crash.
- This model is designed to be operated by adults, although young people of 14 years or more may do so under the instruction and supervision of competent adults.
- The model features sharp points and edges which may cause injury.
- Controlling a RC model successfully is not easy; you will need persistence and determination to learn the skills, and good hand-eye coordination as a basic requirement.
- Before you attempt to fly the model you should study the subject of models in depth, so that you have a basic understanding of how the machines work. Read everything you can on the theory of models, and spend as much time as you can watching other RC model pilots flying. Talk to other pilots, ask their advice, and enroll at a specialist model flying school if you need to. Many model shops will also be prepared to help you.
- Please be sure to read right through these instructions before you start operation of the model. It is important that you clearly understand the complete procedure before you begin flying.
- Don't make modifications to the model's construction by using parts other than those specifically recommended, unless you are certain of the quality and suitability of these other parts for the task.
- We have made every effort to point out to you the dangers inherent in operating this RC model. Since neither we, the manufacturer, nor the model shop that sold you the kit have any influence over the way you build and operate your model, we are obliged to disclaim any liability in connection with it.

LIABILITY EXCLUSION / COMPENSATION

As manufacturers, we at PARKFUN are not in a position to influence the way you build and set up the model, nor how you install, operate and maintain the radio control system components. For this reason we are obliged to deny all liability for loss, damage or costs which are incurred due to the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way.
Unless otherwise prescribed by binding law, the obligation of the PARKFUN company to pay compensation, regardless of the legal argument employed, is limited to the invoice value of that quantity of PARKFUN products which was immediately and directly involved in the event which caused the damage. This does not apply if PARKFUN is found to be subject to unlimited liability according to binding legal regulation on account of deliberate or gross negligence.

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PRECAUTIONS

ALWAYS:

- Take out an insurance policy for RC models
- Check frequencies of other pilots
- Make sure that no people or obstructions are in the flight area
- Check if transmitter and powerpack are fully charged
- Inspect model for loose or damaged parts
- Turn ON the transmitter first and then the model
- Perform range check (see transmitter instruction manual)

AFTER THE FLIGHT

- Disconnect the powerpack
- Turn OFF the model first and then the transmitter
- Check for loose parts or damage
- Store the model in a ventilated dry area
- Do not expose the model to heat or direct sun light for a long period of time

BATTERY PACK:

- Do not overcharge
- Stop flying when the power starts to fade
- Do not short-circuit
- Do not expose to fire, heat
- Do not drill, cut, bend or crush
- Store fully charged in secure area
- Only use appropriate charger
- Never leave the battery unattended while charging
- Only use the battery for this model (see required battery)

WHEN USING LITHIUM POLYMER BATTERIES:

Because of the high energy density of these cells, they must be used with extreme precautions

PARKFUN denies any responsibility claims or damages caused by use or misuse of these batteries.

SAFETY INFORMATION and HANDLING PRECAUTIONS for LiPo battery

To actively prevent a fire:

Lithium Polymer Do's

Do Always use a correctly specified Lithium Polymer charger [mandatory]
Do Always double-check that your multi-function charger is set in LiPo mode [extremely important]
Do ensure that your charger has a clean power supply such as a car battery that is not itself on charge
Do Always set the charger to the total series cell count "s" of your pack (or packs if charging in series)
Do read the battery label to confirm the cell count for charging shown e.g. "charge as 3 cell".
Do handle and transport carefully to avoid piercing, deformation or short circuit with other objects.
Do Disconnect batteries fully from ESC's with BEC to prevent slow over-discharge.
Do ensure connectors are insulated correctly to prevent short circuit in handling or storage
Do always check that batteries are physically and electrically undamaged before charge or discharge

Lithium Polymer Don'ts

Don't ever allow charging to continue above 4.25V per "s" series cell [definition of overcharging]
Don't confuse the total number of actual cells in a pack (e.g. 6 for 3s2p) with the series cell count (3 for 3s2p)
Don't set the charge current limit above 1C unless you have special equipment available and supervise the process fully. 1C = 3.2Amps for a 3200mAh pack, 0.83Amps for an 830mAh pack and so on. Chose an available charger setting at or below the 1C value for your pack.
Don't charge dissimilar or unmatched packs in series or with any difference in cell type, cell capacity, pack capacity or charge state (+/- 0.03V per cell). If in any doubt, charge separately.
Don't permit your pack to be discharged below 3.0V per cell (hint, use monitoring and timing or a Lithium-safe ESC, land immediately in case of noticeable power drop, over-discharge = overheating/damage)
Don't expose batteries to intense heat or prolonged exposure to elevated temperature
Don't charge any pack containing one or more damaged or swollen cell.
Don't continue charging if any part of the pack is getting warm (LiPo packs should charge cool)
Don't charge any pack that is under voltage after recovery (under 3.0V per series cell)
Don't charge batteries unattended, always remain alert and monitor the charging process

To limit the consequences of a potential fire hazard:

Charge in an isolated area away from flammables and valuables and avoid charging batteries in the model. If you decide to charge in the vicinity of other property, equip your charging location with a dry extinguisher or fire blanket. Never charge in a moving vehicle where the dangers of fire and smoke can be compounded by the risk of a road accident. If the battery is crashed in a model, or gets warm during charging place the battery in an open space for observation, never directly into a vehicle, clubhouse, garage or home. If at any time you observe a cell or pack that has started to balloon or swell up, place in a safe area for observation. If swelling occurs while charging, disconnect immediately and place in a safe place for observation. If the wire leads accidentally short out place battery in a safe place and observe for 15 minutes. If you determine that the battery should be disposed of, discharge it slowly to dead flat before throwing away or recycling so it does not present a short-circuit danger to the waste disposal system. Use a light bulb or immerse in salt water to discharge slowly.

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BOX CONTENT PF-210-**-**

1 Airplane FUSION
Completely factory assembled (except wing panels) with all electronics installed.

Electronics accessories
1 Professional 4-Channel FM transmitter
1 Li-Po battery 7,4V - 1800mAh
1 Automatic Balance Li-Po charger
1 Mains charger power supply
1 USB flightsimulator interface cable
1 FREE FMS flightsimulator freeware

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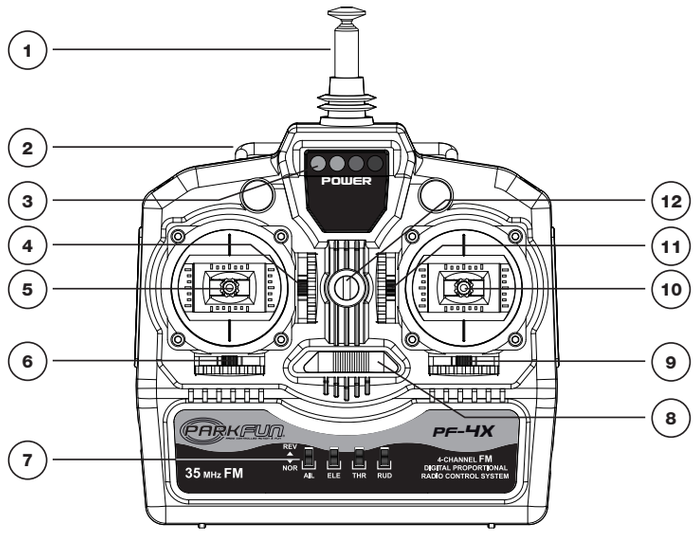
TECHNICAL SPECIFICATIONS:

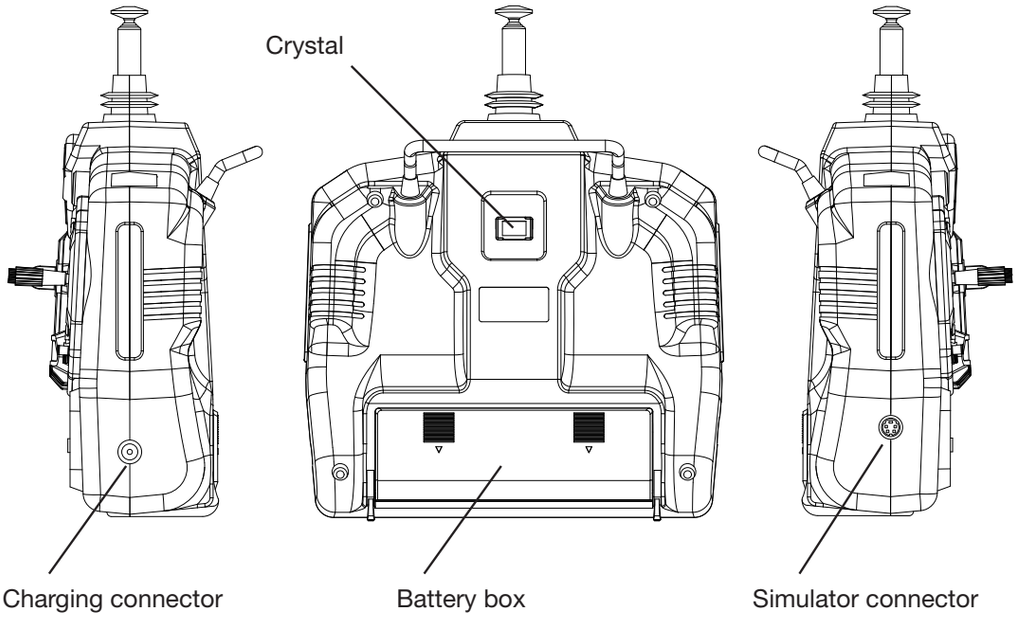
Wingspan:	1850mm
Length:	1090mm
Weight:	980g
E-motor:	Brushless 200W
RC:	4CH/4 micro servos
Power:	LiPo battery pack 7,4V - 1800 mAh

Required for operation: 8 dry cells batteries (LR-6 type)

TRANSMITTER:

1 Antenna
2 Carrying bar
3 LED indicator
4 Elevator trim Mode 1
Throttle trim Mode 2
5 Elevator / Rudder stick Mode 1
Throttle / Rudder stick Mode 2
6 Rudder trim
7 Servo reverse switches
8 ON / OFF switch
9 Ailerons trim
10 Throttle / Ailerons stick Mode 1
Elevator / Ailerons stick Mode 2
11 Throttle trim Mode 1
Elevator trim Mode 2
12 Hook





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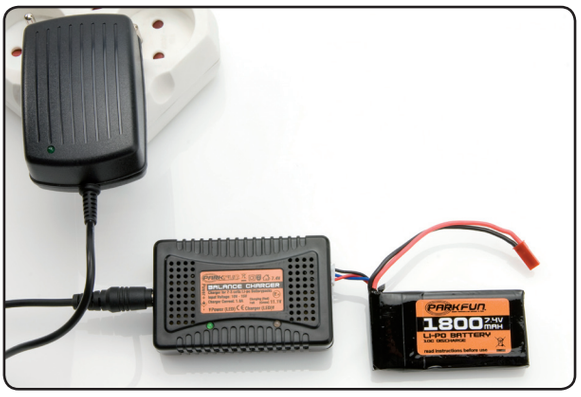
CHARGING THE LIPO BATTERY



- Connect the 230V power supply to the Li-Po charger.
- Connect the power supply to a mains socket. The RED led of the charger will turn on.
- Connect the Li-Po batterypack to the charger, the ORANGE led will turn on.
- When the batterypack is fully charged, the GREEN led will turn on.

TRANSMITTER BATTERY

Install 8 pcs dry cells LR-6 (not included) in the battery box of the transmitter.

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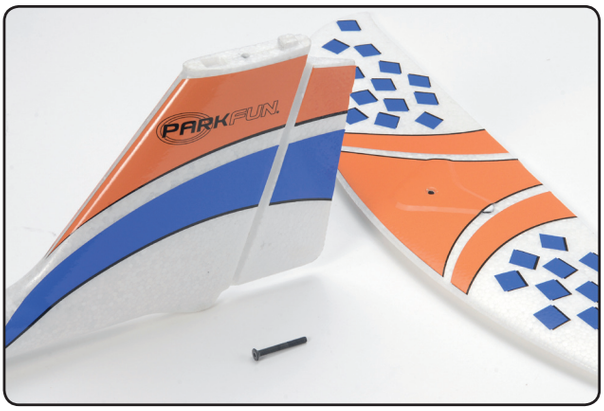
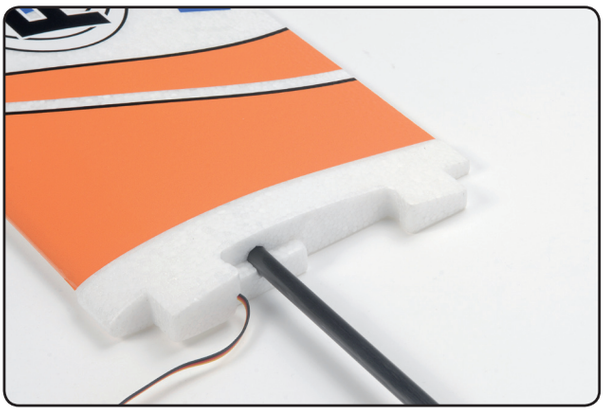
STEP 1



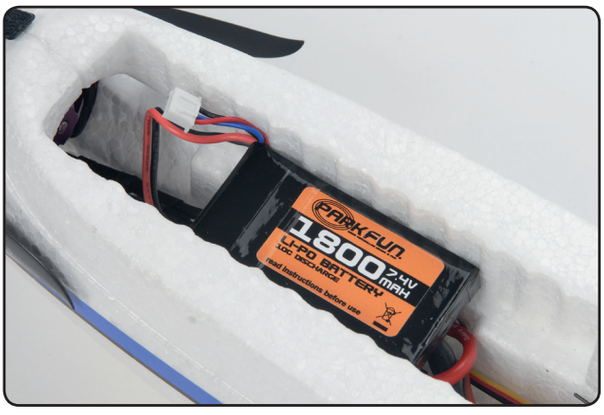
- Install the elevator plane and use the screw to fix it.

STEP 2



- Insert the wing joiner tube in the wing half.
- Insert a wing half in the fuselage
- Slide the other wing half over the tube.
- Connect the other servo to the connector, respect polarity.
- Gently pull the excessive piece of servo lead into the fuselage.
- Push both halves into the fuselage until they are firmly fixed

STEP 3



- Install the battery.

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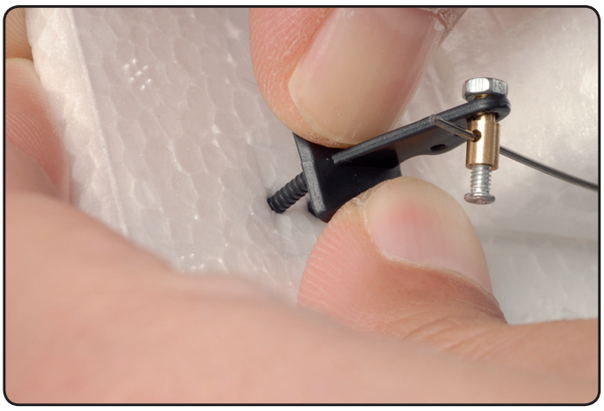
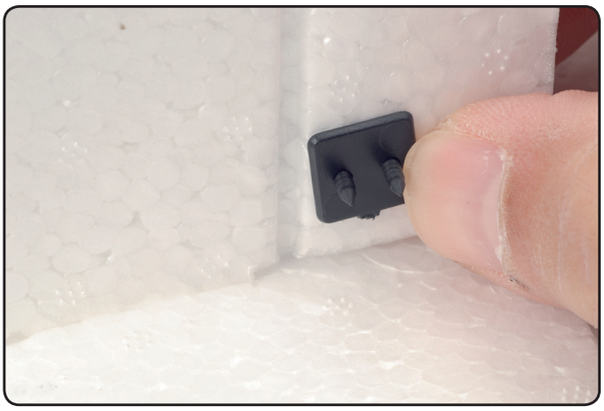
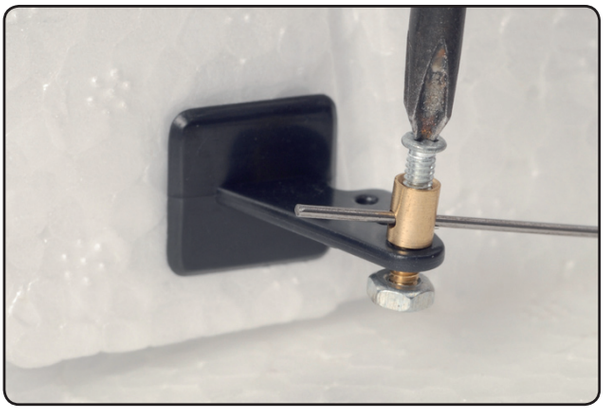
STEP 4







- Fix the control horns to the vertical fin and to the elevator and click the retaining plastic on the other side of the control surfaces.
- Tighten the screw on the pushrod.
- Do not overtighten the nut on the control horn, some play is required.
- Secure the nut using cyano glue.
- Repeat these steps for the rudder.

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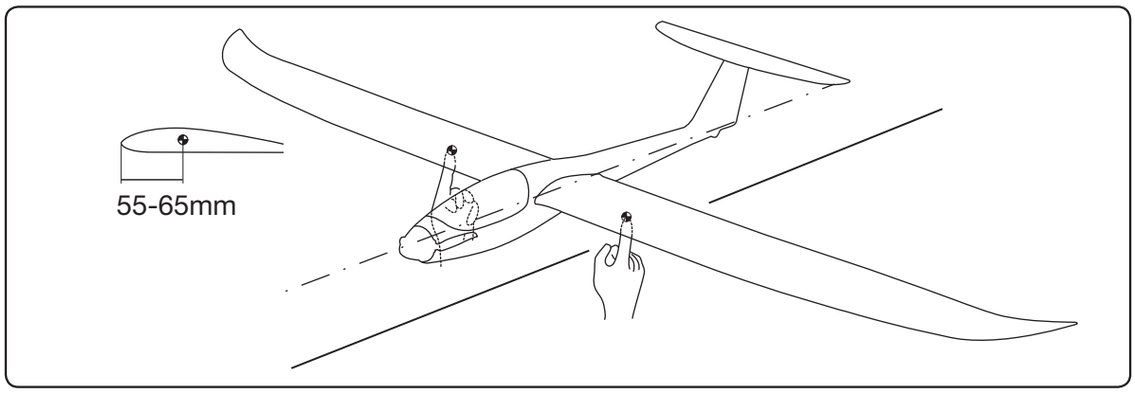
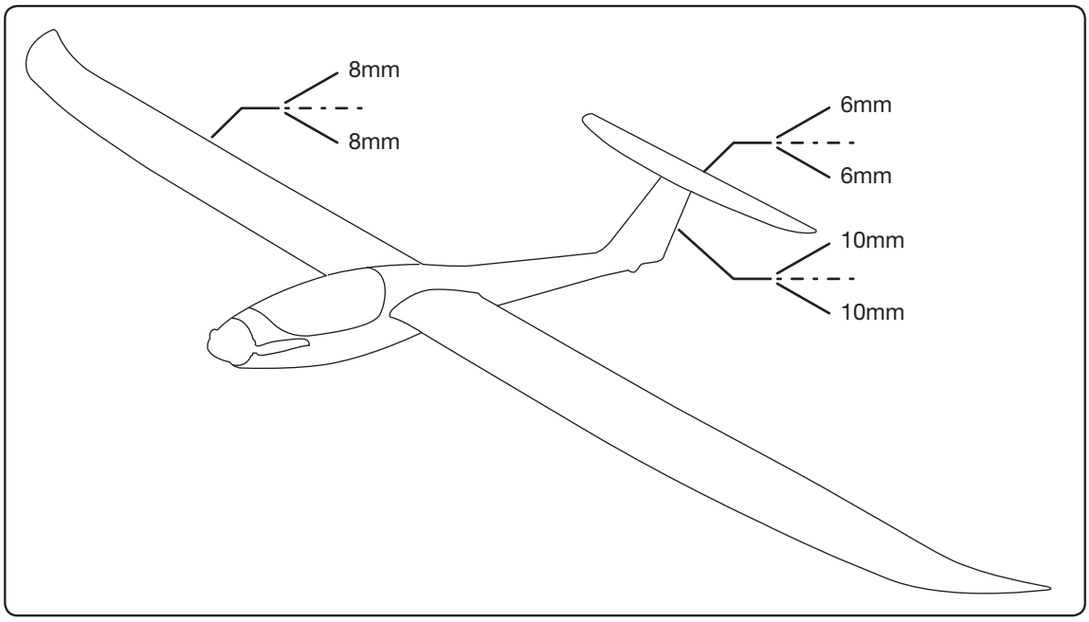
CONTROL OF THE CENTRE OF THE GRAVITY



The centre of gravity (CG) will determine how the natural forces of gravity will effect the airplane. Having the centre of gravity too far forward or backward will cause the airplane instable. Reposition the battery until the airplane is level.

CONTROL MOVEMENTS



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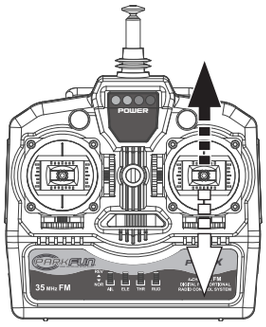
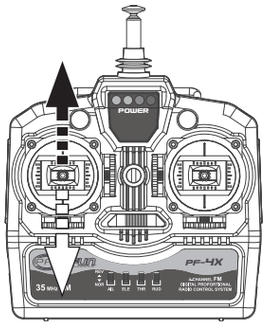
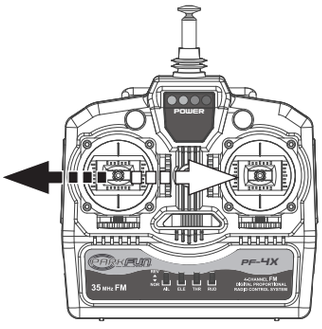
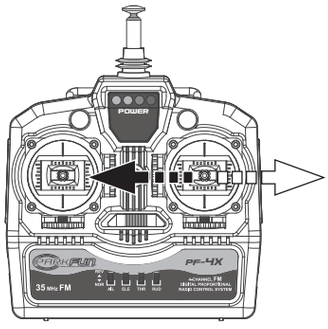
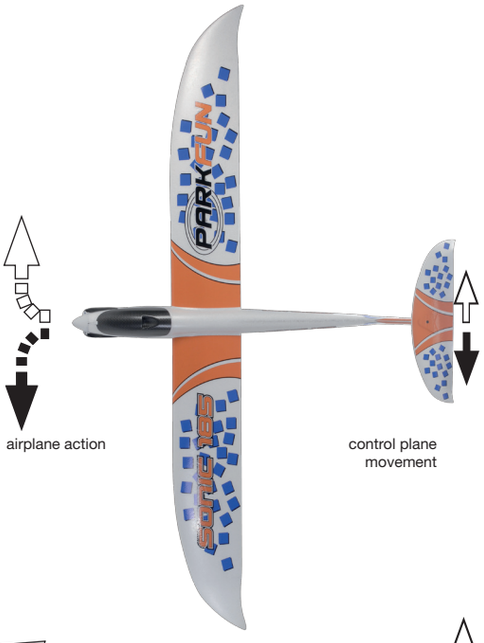
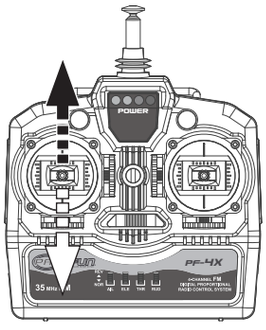
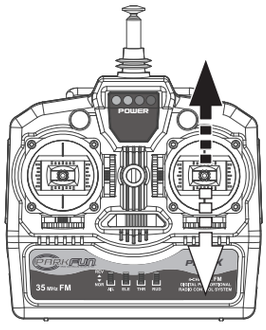
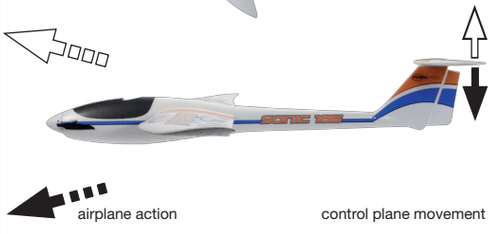
STICK OPERATION

MODE 1	MODE 2	MOVEMENT
THROTTLE		
		
RUDDER		
		
ELEVATOR		
		
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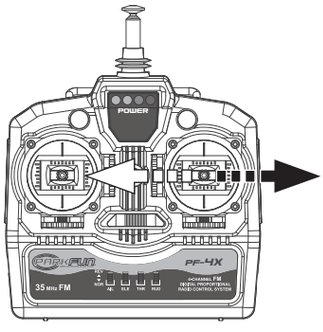	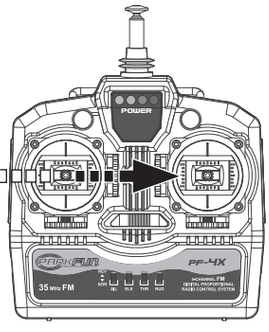	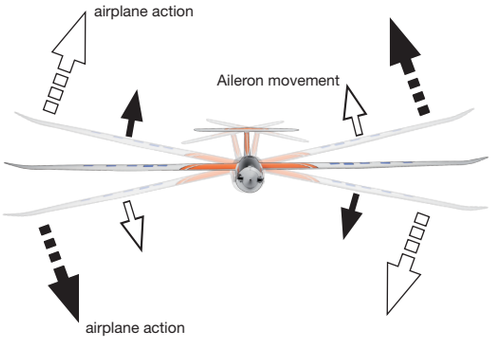

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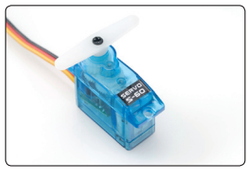
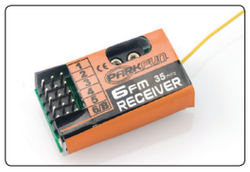
SPARE PARTS

PF-210-SP-001	SONIC 185 FUSELAGE (NO ELECTRONICS)
PF-210-SP-002	SONIC 185 WING SET (INCL WING JOINER)
PF-210-SP-003	SONIC 185 ELEVATOR PANEL
PF-210-SP-005	SONIC 185 MOTORMOUNT
PF-210-SP-006	SONIC 185 FOLDING PROPELLER BLADES
PF-210-SP-007	SONIC 185 SPINNER + ADAPTER
PF-210-SP-008	SONIC 185 MOTOR MOUNT
PF-210-SP-009	SONIC 185 BRUSHLESS MOTOR
PF-210-SP-010	SONIC 185 CARBON LOOK CANOPY
PF-210-SP-011	SONIC 185 PLASTIC PARTS SET
PF-425-SP-035	SONIC 185 BRUSHLESS ESC 35A
PF-450-SP-218	SONIC LI-PO BATTERYPACK 7,4V 1800MAH



PF-120-SP-017
Servo

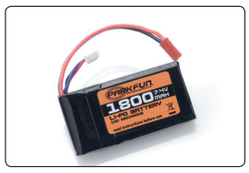
PF-440-001
2&3 cells balance charger



PF-405-SP-35 *RX 35mHz*
PF-405-SP-36 *RX 36mHz*
PF-405-SP-40 *RX 40mHz*
PF-405-SP-41 *RX 41mHz*

PF-400-35-M1 *TX 35mHz mode1*
PF-400-35-M2 *TX 35mHz mode2*
PF-400-36-M1 *TX 36mHz mode1*
PF-400-36-M2 *TX 36mHz mode2*
PF-400-40-M1 *TX 40mHz mode1*
PF-400-40-M2 *TX 40mHz mode2*
PF-400-41-M1 *TX 41mHz mode1*
PF-400-41-M2 *TX 41mHz mode2*
PF-400-72-M1 *TX 72mHz mode1*
PF-400-72-M2 *TX 72mHz mode2*

PF-440-005-EU
Power supply adapter (EU)
PF-440-005-UK
Power supply adapter (UK)
PF-440-005-UL
Power supply adapter (UL)
PF-440-005-AU
Power supply adapter (AU)
PF-440-005-AR
Power supply adapter (AR)
PF-440-005-SA
Power supply adapter (SA)



PF-450-SP-218
Li-Po batterypack 7,4V - 1800 mAh

EU: Europe • UK: United Kingdom • UL: South America • AU: Australia • AR: Indonesia • SA: South Africa

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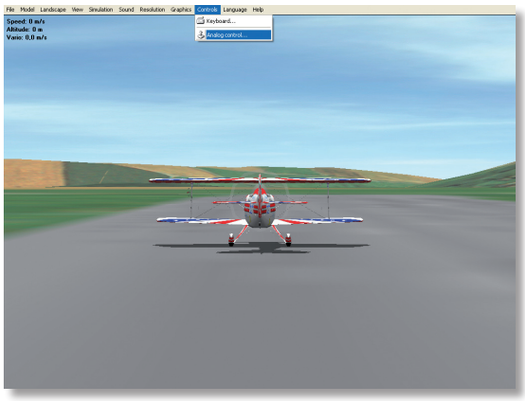
USB FLIGHTSIMULATOR

Flight controller installation

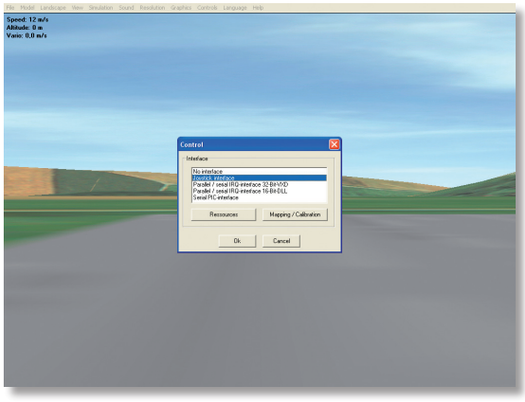
- Insert the CD.
- If the installation does not launch automatically, simply open the drive which contains the CD and double click the installation file (fmsbeta70.exe).
- Follow the instructions that appear on the screen.
- Connect the controller (transmitter) and start the software.

Calibration

- In the menu bar, click "Controls" and choose "Analog control".

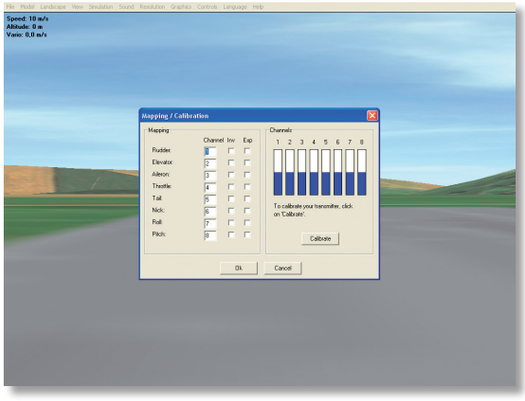


- Choose joystick interface and click "Mapping/Calibration".



- In the menu that appears, click calibrate and follow the calibration steps.
- When you're finished, click OK, this completes the calibration of the flight controller. For more information, please visit http://www.flying-model-simulator.com/

ENJOY!



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UNIVERSAL POWER ENTERPRISES LTD

Declaration of conformity EC-R&TTE

Product:	SONIC airplane with 4CH radio transmitter
Intended Purpose:	Radio equipment for remote controlling of models
Equipment class:	2

Complies with the essential requirements of chapter 3 and the other relevant provisions of the FTEG (Article 3 of the R&TTE directive), when used for its intended purpose

Harmonised standards applied

ETSI EN 300 220-1 (2000) : Electromagnetic compatibility and Radio spectrum Matters (ERM);Short Range Devices (SRD); Radio equipment to be used in the 25MHz to 1000MHz frequency range with power levels ranging up to 500mW; Part1: Technical characteristics and test methods

ETSI EN 300 220-3 (2000) : Electromagnetic compatibility and Radio spectrum Matters (ERM);Short Range Devices (SRD); Radio equipment to be used in the 25MHz to 1000MHz frequency range with power levels ranging up to 500mW; Part3: Harmonized EN covering essential requirements under article 3.2 of the R & TTE Directive

ETSI EN 301 489-1 (2004) : Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1 : Common technical requirements

ETSI EN 301 489-3 (2002) : Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3 : Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9KHz and 40GHz

HONG KONG, 04 March 2008

S. Engelen
CEO

CE

UNIVERSAL POWER ENTERPRISES Ltd
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RADIO CONTROL FREQUENCIES ADMITTED IN FOLLOWING COUNTRIES

BANDS	Channel	Frequencies	D	B	A	DK	F	I	L	N	NL	E	S	CH	UK	FIN	GR
35 MHz-Band																	
	K61	35.010	•	•	•	•		•	•	•	•		•	•	•	•	•
	K62	35.020	•	•	•	•		•	•	•	•		•	•	•	•	•
	K63	35.030	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K64	35.040	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K65	35.050	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K66	35.060	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K67	35.070	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K68	35.080	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K67	35.070	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K68	35.080	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K69	35.090	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K70	35.100	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K71	35.110	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K72	35.120	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K73	35.130	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K74	35.140	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K75	35.150	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K76	35.160	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K77	35.170	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K78	35.180	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K79	35.190	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	K80	35.200	•	•	•	•		•	•	•	•	•	•	•	•	•	•
40 MHz-Band																	
	K50	40,665	•	•	•	•		•	•	•	•	•	•	•		•	•
	K51	40,675	•	•	•	•		•	•	•	•	•	•	•		•	•
	K52	40,685	•	•	•	•		•	•	•	•	•	•	•		•	•
	K53	40,695	•	•	•	•		•	•	•	•	•	•	•		•	•
	K54	40,715	•			•		•			•	•	•	•		•	•
	K55	40,725	•			•		•			•	•	•	•		•	•
	K56	40,735	•			•		•			•	•	•	•		•	•
	K57	40,765	•			•		•			•	•		•		•	•
	K58	40,775	•			•		•			•	•		•		•	•
	K59	40,785	•			•		•			•	•		•		•	•
	K81	40,815	•			•		•			•	•		•			•
	K82	40,825	•			•		•			•	•		•			•
	K83	40,835	•			•		•			•	•		•			•
	K84	40,865	•			•		•			•	•		•			•
	K85	40,875	•			•		•			•	•		•			•
	K86	40,885	•			•					•	•		•			•
	K87	40,915	•			•					•	•		•			•
	K88	40,925	•			•					•	•		•			•
	K89	40,935	•			•					•	•		•			•
	K90	40,965	•			•					•	•		•			•
	K91	40,975	•			•					•	•		•			•
	K92	40,985	•			•					•	•		•			•
41 MHz-Band																	
	400	41.000					•										
	401	41.010					•										
	402	41.020					•										
	403	41.030					•										
	404	41.040					•										
	405	41.050					•										
	406	41.060					•										
	407	41.070					•										
	408	41.080					•										
	409	41.090					•										
	410	41.100					•										

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OTHER PRODUCTS

SCOUT

PF-205--**-****

BLITZ

PF-120--**-****

FUSION

PF-200--**-****

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